Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination – July 2020
IV Semester

Class : II UG **Time : 3 Hours**
Major: Physician Assistant **Max. Marks : 100**

18BPAI04 DSE IV – Bio medical Instrumentation and Scientific Measurements

Part – A **10x1=10**

Choose the Correct Answer

1. A Device which defects physical property and records indicates& responds to it is termed as
   a. Sensors
   b. Noise
   c. measurement
   d. None of the above

2. Sensor that do not require power supply are called as
   a. Active sensor
   b. Passive sensor
   c. Analog sensor
   d. Digital sensors

3. What is the solution for noise or poor recording due to machine problems.
   a. Calibration of machine
   b. Ground all ECG lead
   c. Internal repair
   d. None of above

4. In MRI Scan, the source for MRI scan is
   a. Magnetic field
   b. Ultra – Violet
   c. Infra Red rays
   d. None of the above
5. The Obstruction of blood flow is known as
   a. Cyanosis
   b. Edema
   c. Hyperemia
   d. Stasis
6. The Device which detect whether a mass is begin or malignant is
   a. CT
   b. MRI
   c. PET
   d. All the above

7. The parts of spectrometer are
   a. Light source
   b. Monochromator
   c. wave length selector
   d. All the above

8. Dialysis machine filter unwanted minerals from blood by means of
   a. Diffusion
   b. Ultrafiltration
   c. a&b
   d. None of the above

9. Among the following things which have highest attenuation of ultrasound
   a. Blood
   b. Bone
   c. Fat
   d. Muscle

10. A technique commonly used in the lab to separate charged molecules is termed as

a. Electrophoresis
c. UV
b. Spirometry
d. None of the above

Part B **5 x 6 = 30**

Answer ALL questions

Each answer should not exceed 400 words or two pages

11.a. Explain the classification of biomedical Instrument.

(or)

11.b. Explain different type of sensors and its principle.

12.a. List out the properties of X rays I detail.

(or)

12.b. Explain about Electrochemical techniques.

13.a. Explain the various method of Blood pressure measurement.

(or)

13.b. Explain about the immunological methods implemented in the clinical equipment.

14.a. Describe the 3 types of ECG lead configurations.

(or)

14.b. Draw the diagram of Infusion pump & Brief its biomedical Instrumentation.

15.a. Write short note on safety codes & standards.

(or)

15.b. Short note on basic approaches to protection against shock.

Part C **5 x 12 = 60**

Answer ALL questions

Each answer should not exceed 800 words or four pages

16.a. Explain the different types of sensors and its principle.

(or)

16.b. Explain in detail about static and dynamic characteristics in medical Instruments.

17.a. Explain EMG in detail.

(or)

17.b. Explain various techniques carried out for the measurement of cardiac output.

18.a. Explain in detail about low blood is purified with hemodialysis equipment wits its types.

(or)

18.b. Draw the block diagram of defibrillator and explain its biomedical instrumentation.

19.a. Explain the principle of electrophoresis with its advantage in biomedical measurement.

(or)

19.b. Write in detail about SPECT & PET.

20.a. Explain the spectrophotometry .

(or)

20.b. The Operation of chamber of plethysmography – explain

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